# Modified wood-working drills for sheet aluminium

Drew Diamond VK3XU

**Adapting these standard wood-working bits to cut sheet aluminium not only saves you the cost of special, rarely used tools but strangely enough makes the bits work better at their original task.**

The usual tool for making clean round holes in aluminium sheet is the hammer or bolt- operated socket punch (References 1 and 2). Sets of punches may be purchased from at least one overseas supplier, but their cost may not be justifiable for the constructor who only needs to make the occasional round hole in aluminium.

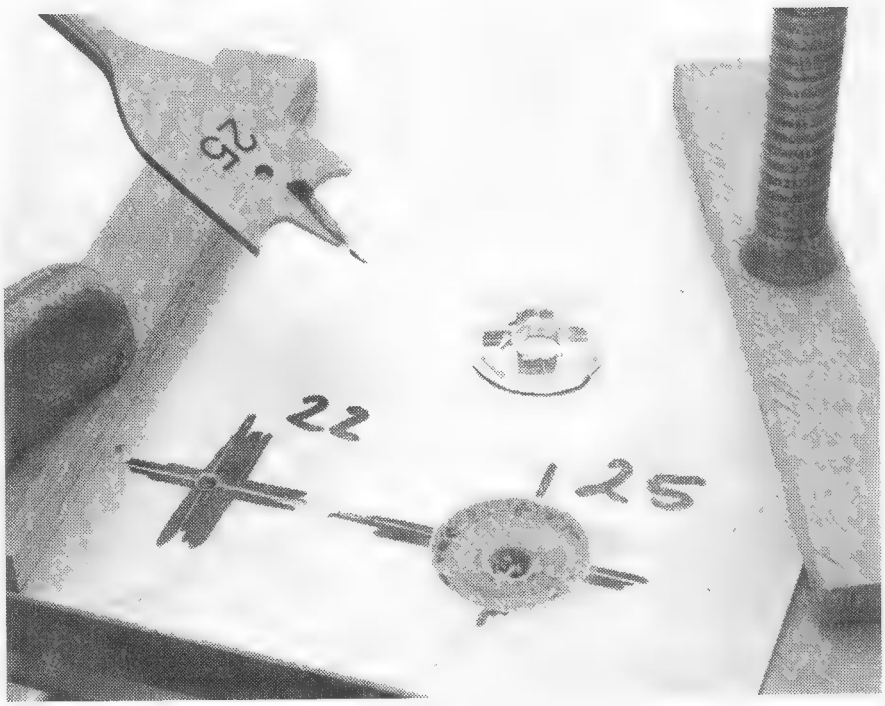
Fair results are obtainable with ordinary flat style 'Irwin'™ wood-drills, generic versions of which may be bought quite cheaply from tool suppliers in a range of imperial and metric sizes. For this purpose, these drills require the modification described below, and actually work rather better in wood or plastic afterwards.

Using an angle-grinder, carefully 'nibble' metal from between each of the outside cutting edges and the pilot point. To maintain balance, alternately remove only a small amount from each side until you have formed two new outer cutting edges, as can be seen in the Photo.

Ideally, the drill should be used in a bench-drill, with the job firmly clamped to the drill table, and backed with scrap wood. However, with care and practice, quite good holes may be produced with an ordinary (preferably variable-speed) electric hand-drill. Again, the job must be firmly G-clamped upon a sturdy work surface. Use a scrap of chip-board (or similar) as a backing to prevent damage to the bench.

Always wear safety specs when drilling. Make it such a habit that you feel naked without them.

First, with a twist drill, make a small pilot hole (about 3 mm) in the exact spot required, then follow through with the modified wood-drill. The resulting hole may be a tad larger than the nominal drill size so, drill a slightly smaller hole initially if the required diameter is critical. Do not 'force' the pace - apply just a firm downward pressure. It should require about 5 or 10 seconds to break through the other side of 1.6 mm sheet. A hole thus made, and the waste, is pictured in the Photo.




A hole made with the modified wood drill (and the waste).
**Photo: Andrew Diamond**

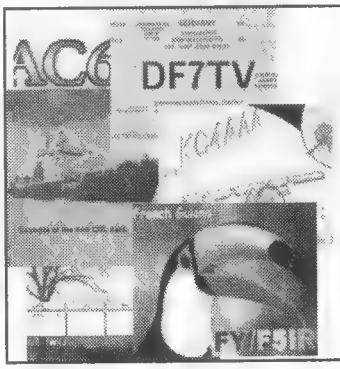
Finally, clean up burrs and rough edges with (say) a second-cut file, and bring the hole to the exact required size with a half-round file.

References and Further Reading

1. "Making Holes in Sheet-metal"; *Amateur Radio,* April 2001.

2. *Radio Communication Handbook;* RSGB, Ch. 26 in any recent edition.

**ar**




**QSL**

**THE WIA IS THE CUSTODIAN OF SOME 800,000 QSL CARDS**

**AND WE WANT MORE!**

If you are assisting in the disposal of the shack of an SK, or are moving, or have too many of your own, do not throw out the QSLs as they are of great historical value.

Ring the WIA on **(03) 9729 0400** and we will make arrangements to have the cards placed in our repository at our new premises. It is the aim of the WIA to have a revolving display from this, one of the world's biggest, collections of QSLs, superbly assembled by Ken Matchett VK3TL – SK.